

# STUDY ON ECONOMIC AND TECHNOLOGICAL EMPOWERMENT OF RURAL WOMEN THROUGH 'DIGITAL LITERACY AND DIGITAL LIVELIHOOD ENHANCEMENT PROGRAMME' IN TAMIL NADU

**KRITHIKA. S<sup>1</sup>, REXLIN SELVIN<sup>2</sup>, K. PRABAKARAN<sup>3</sup> & R. VELUSAMY<sup>4</sup>**

<sup>1</sup>Post Graduate student, Department of Agricultural Extension and Rural Sociology, Agricultural College  
and Research Institute, Madurai, Tamil Nadu, India

<sup>2</sup>Professor, Department of Agricultural Extension and Rural Sociology, Agricultural College  
and Research Institute, Madurai, Tamil Nadu, India

<sup>3</sup>Assistant Professor, (Agricultural Statistics), Department of Agricultural Economics, Agricultural College  
and Research Institute, Madurai, Tamil Nadu, India

<sup>4</sup>Associate Professor, Agricultural College and Research Institute, Madurai, Tamil Nadu, India

## ABSTRACT

*ICT has been emerging as a powerful mode in not just transfer of technology but used in enhancing the livelihood of rural women through its various innovative approaches. The research was undertaken to study the economic and technological empowerment of rural women through various ICT tools in two districts, Madurai and Virudhunagar, in Tamil Nadu. The area was purposefully selected as several non-governmental organizations are conducting exclusive ICT projects for rural women. The paper examines one such project being implemented by the Association for Sarva Seva Farms to impart digital literacy among rural women through its innovative programme in collaboration with Tata and Google. The goal of the project is to enhance digital literacy and digital livelihood of rural women, particularly with the use of mobile applications, voice message and the applications of internet and thereby empower them. A total of 120 respondents were selected from both the districts using simple random sampling method. The effect of various ICT tools and their interventions on the empowerment of rural women was measured pre and post training. The percentage change was calculated and assigned ranks. Z test (two-tailed) was performed to find the significant difference between the mean empowerment. The calculated value obtained for economic empowerment (15.51) and technological empowerment (20.83) confirmed statistically that there is a positive significant difference in mean empowerment. The paper intends to show how ICT, especially mobile technology, benefits rural women and concludes with the recommendations to empower them technologically.*

**KEYWORDS:** ICT, Digital Literacy, Rural Women, Empowerment, Z Test & Percentage Change

**Received:** Mar 16, 2019; **Accepted:** Apr 06, 2019; **Published:** Apr 24, 2019; **Paper Id.:** IJASRJUN20197

## INTRODUCTION

There is a paradigm shift in the role of extension after the advent of information and technology in rural areas. The conventional extension system which focuses on the 'top-down' approach where the farmer is just a passive listener is gradually becoming passé now. The farmer now looks for a more participative, innovative approach in every stage of farming, right from production to marketing. ICT now fills the gap by addressing such needs of the farmers. And in a developing country like India, where women account to 33% of cultivators and 43%

of agricultural laborers, ICT is a boon to enhance their livelihood and empower them socially, personally, technologically and economically. It is an indisputable fact that there is a strong bond between gender and ICT. According to the report by FAO's State of Agriculture 2011 Women in Agriculture: Closing the gender gap in development, "Women contribute 43 per cent of agricultural labor in developing countries and empowering them could increase farm productivity by 20-30 per cent and raise national agricultural output by 2 to 4 per cent".

However, as many researchers point out, there is a huge gender digital gap in utilizing ICT. As RasheedSulaiman et al., (2012) rightly points out, issues around gender and ICTs are very complex and the existing research is very thin.

Women empowerment has been discussed in the international arena for a while now and has been at the forefront of many campaigns. Technology-based social empowerment is an emerging trend in today's information world. There are many projects being implemented in both the national and state level in the use of ICT among rural women. India Shop, an e-commerce website (2005) in Tamil Nadu has been designed to sell products made by rural women's cooperatives and NGOs. The Dhan Foundation in Madurai district has been successfully implementing various projects such as ICT based Community Service Centres to impart computer and internet literacy among rural women. They also support community radio stations to provide expertise to the grass root community, especially in the empowerment of rural women. The 'AmmaKaipesi portal' (mobile phones) was launched in 2016 in the state of Tamil Nadu at a cost of Rs 15 crore to benefit 20,000 women SHG trainers. It is computerized software installed in the smartphones in order to supervise the works of SHGs and upload data in registers. The well known Self Employment's Women's Association (SEWA) in India has established ICT programmes to increase women microenterprise activities. Vidiyal NGO in Theni district in Tamil Nadu has come up with a novel way of sending voice messages for women goat farmers in the area to provide them scientific methods in goat farming. The project has benefitted many goat farmers in the area and more than 70 per cent of the women have repaid their loans (Times of India dated Feb 23, 2013). Such innovative programmes offer a wide scope for extension agents to not just make rural women informative but also contribute to their growth and development.

Empowerment is a process by which women gain control over resources, income, knowledge, information, and technology, skill and training. It enhances their decision-making skills and acts as a harbinger for their livelihood development. Empowerment of women through ICT is a multifarious process involving many aspects such as enhancing awareness, utility and increasing access to ICT tools. Thus bridging the gap and helping women access various technologies will increase agricultural productivity, improve marketing linkage and thereby empower them.

Keeping in view of the above facts, the study attempts to explore the role of ICT tools in the economic and technological empowerment of rural women.

## METHODOLOGY

For the research, two districts, Madurai and Virudhunagar, were selected purposefully as several NGOs are involved in imparting digital literacy among rural women. One such project developed by Sarva Seva Association (ASSEFA), is the internet saathi (friend) programme, which is being implemented in collaboration with Tata and Google. The digital empowerment programme introduced women to various ICT tools and provided hands-on training to use the tools proactively for their growth and development. The selected saathis were allotted a few villages in their block to train other rural women and thereby help them connect to the outside world. From each district, two blocks were selected randomly and a total of nine villages were covered in both the blocks. The study was undertaken among 120 women

respondents who were selected through simple random sampling method. The study used ex-post-facto research design wherein the researcher has no scope to manipulate the independent variables as they have occurred already. Data was collected using a structured interview schedule and was pre-tested in a non-sample area. Seventeen indicators or independent variables were selected to measure the dependent variable, empowerment of rural women, before and after the ICT interventions. The scale was borrowed from R. A. Bharti (2005). The respondents were asked to place themselves on a ladder of very high to very low (five-point continuum with a scoring pattern of 5,4,3,2,1) and the scores were totaled.

## RESULTS AND DISCUSSIONS

**Table 1: Impact of ICT Training Over Technological Empowerment of Rural Women**

S. No	Criteria	Before		After		Percentage Change	Rank
		No	%	No	%		
1	Able to use different ICT tools with ease	219	182.5	447	372.50	104.10	III
2	Increased information literacy	220	183.33	448	373.33	103.63	IV
3	Improved ability to communicate with family and friends	276	230.00	508	423.33	84.05	V
4	Enhanced expertise to produce and publish online content	176	146.66	287	239.16	63.06	VII
5	Adopting and practicing the latest ICT technologies learned in real life situations	205	170.83	423	352.50	106.34	II
6	Can upload/download/browse contents from the internet	196	163.33	407	339.16	107.65	I
7	Application of technological improvements in field/farm	208	173.33	381	317.50	83.17	VI
8	Able to use different ICT tools for various entrepreneurial activities	190	158.33	280	233.33	47.36	VIII

### \*Multiple Responses Obtained

Percentage change was calculated for each statement and was ranked highest to lowest. Z test to compare two sample means, Pearson's correlation, partial regression analysis, and percentage analysis were worked out for interpreting the results.

Technology and its accessibility have been hitherto men's forte and women were given least preference in the use of technologies. This gender digital divide has been quite obvious in rural society. However, as times change, there is a need to bridge the gap between rural women and technology by empowering them and help them learn, operate and use the tools with ease. This will aid them in gaining access to basic education, health, credit, sustainable employment and guarantee a better future. Table 1 analyzes the different aspects of technological empowerment and records the percentage change before and after the training in ICT.

Table 1 shows there is increased skill of 107.65% in uploading and downloading content from the internet and is ranked I. Applying technologies in real life situations is reported as higher as 106.34% and ranked in the second place. Earlier it was at 173.33%. It was found that after attending training in ICT, rural women are able to apply ICT technologies in real life situations and the percentage increased to 317.50%. Many rural women are benefitted by the internet to gather information regarding their occupation, children's education, health, etc. There is also an increase in information literacy reported at 103.63% and 104.10% change in the ability to use ICT tools with ease post the training. The rankings are assigned as III and IV respectively.

However, rural women were found to lack skill in producing and publishing online content. The increase in

percentage is at 63.06%. Lack of training and knowledge might be plausible reason. Similarly, only less than half percentage increase (47.36%) is recorded in using ICT for entrepreneurial activities. Many rural women are unaware of marketing their products online and take it beyond the local market. Their marketing skill is restricted to selling in local markets. They are also unaware of the various online portals, e-commerce websites that cater to the needs of the rural women. Unlike their urban counterparts, who make a killing through marketing their products through Facebook, Whatsapp, Instagram, and other social media, rural women are completely unaware about the prospective of selling online and make a brand for themselves, though they are otherwise skilled in the use of social media. The study indicates that rural women should be motivated and trained properly to improve production, have strong market linkages and engage in the value chain with the support of ICT tools.

**Table 2: Impact of ICT Training over Economic Empowerment of Rural Women**

S. No	Criteria	Before		After		Percentage Change	Rank
		No	%	No	%		
1	Freedom to use ATM	231	192.50	505	420.83	118.61	I
2	Freedom to use debit cards	219	182.50	426	355.00	94.52	II
3	Freedom to spending on self	280	233.33	459	382.50	63.92	VIII
4	Ability to generate income	299	249.16	486	405.00	62.54	IX
5	Control over income	296	246.66	410	341.66	38.51	XI
6	Participation in a decision about the marketing of produces	215	179.16	282	235.00	31.16	XII
7	Personal savings in the form of fixed deposit	250	208.33	415	345.83	66.00	VII
8	Contribution to family income	275	229.16	476	396.66	73.09	VI
9	Able to support children's educational needs financially	284	236.66	494	411.66	73.94	V
10	Standard of living	289	240.83	447	372.50	54.67	X
11	Participation in household budgeting	262	240.83	426	355.00	62.59	IX
12	Opportunity for credit	245	218.33	465	387.50	89.79	III
13	Avenues for employment and income generation	249	204.16	453	377.50	81.92	IV

**\*Multiple Responses Obtained**

According to the UN, rural women are the key agents for economic development. Empowering them will not only help the rural community but the overall economic productivity considering a large number of women workforce in agriculture worldwide. **Table 2** shows that rural women have come a long way in the use of bank transactions and control over credit. A whopping 118.61% change has been recorded in using ATM and 94.2% in possessing and using debit cards on their own after the training. This might be due to the financial inclusion programmes by the Government of India Pradhan Mantri Jan Dhan Yojana that aims to expand financial services and credit facilities to all. A percentage change of 89.79% has been noted in increasing opportunities for credit. The drastic increase in accessing credit might be because of the growth of Self Help Groups since 2000.

SHGs can thus be seen playing a prominent role in financial intermediation, that combines access to low-cost financial services to rural women and thus provide new and wider opportunities for economic development. NABARD's SHG bank linkage programme has actively supported the development of microfinance and thus plays a significant role in the economic independence and empowerment of rural women by promoting rural entrepreneurship. Around 81.92% increase has been noted in employment and income generation among rural women. Women now are aware of the various job opportunities available elsewhere. Earlier, it was only hearsay. Now after the introduction of the internet and other

modes of communication, they are able to gather information about various jobs through job portals like Naukri.

Also, 73.94% increase has been recorded in fulfilling children's educational needs, 73.09% in contribution to income and a 66% increase in savings and fixed deposit. Rural women now are more confident about bank related transactions, loans, policies, and saving schemes. However, the control over income has a moderate increase in percentage (38.51%). Old cultural norms and gender inequality still prevail in rural areas where women have no claim in their hard earned money. Also, promoting and marketing of produces using ICT shows a mere 31.16% increase as many women lack awareness and skill training in e-commerce.

**Table 3: Impact of ICT Training Towards Rural Women Empowerment**

(n=120)

Variables	Before		After		Percentage Change	Z Value (Two-Tailed) (Calculated Value)
	Mean	SD	Mean	SD		
Economic empowerment	29.60	6.35	43.32	7.04	46.35	15.51 (0.00**)
Technological empowerment	14.18	4.05	27.12	7.63	91.25	20.83 (0.00**)

**P value:** \*\*Significant at 1% level

It can be inferred from **Table 3** that the calculated Z (two-tailed) value is greater than the critical value (1.96) thus revealing a significant difference in economic empowerment (15.51), and technological empowerment (20.83) before and after training in ICT. Also, the probability (*P* value) associated with the sample is highly significant ( $P < 0.05$ ) in both the dimensions of empowerment and hence null hypothesis can be rejected. We thereby conclude that there is a significant difference between the mean economic and technological empowerment before and after the ICT training/interventions among rural women.

It can also be inferred from the Table, technological empowerment shows a percentage change of 91.25%, whereas economic empowerment shows a percentage change of 46.35% .

## CONCLUSIONS

Leveraging ICT tools for women empowerment requires a collaborative effort among the policymakers, government and non-government organizations and rural women. According to *FAO manual on Gender and ICT*, though substantial progress has been made in the availability and accessibility of ICTs, seven critical factors have to be addressed viz, content, capacity development, gender and diversity, access and participation, partnerships, technologies, and economic, social and environmental sustainability. The study reveals several criteria such as capacity building based on individual needs, the right mix of technologies, increasing participation, continuous monitoring, evaluation and feedback, practical and innovative use of ICT, partnerships and financial support should be taken into consideration to achieve the desired results. Though rural women have shown considerable improvement in the awareness and accessibility of ICT tools and show a moderate increase in empowerment, they lack the practical application and use of ICT innovatively for development. ICT tools are merely seen as gadgets and the actual goal of using ICT applications for innovation, development and foster empowerment of rural women still needs a concrete design, planning, implementation and effective partnerships between various organizations. Thus to make a real impact among the rural women community and thereby reach the goal of high empowerment, the use of ICT should be more participative, innovative and streamlined towards specific needs of the rural women.

**REFERENCES**

1. Fuzirah Hashima (2011.). *Empowering rural women entrepreneurs with ICT skills: An impact study of Inita project in Malaysia. Procedia Social and Behavioural Sciences*, 15 (2011) 3779-3783.
2. Rasheed Sualaiman V, Andy Hall, N.J.Kalaivani, Kumuda Dorai & T.S.Vamsidhar Reddy (2012). *Necessary but not sufficient: Critiquing the role of information and communication technology in putting knowledge into use. The Journal of Agricultural Education and Extension*, 18(4), 331-346.
3. Sharma, S. and Maheshwari, S. (2015) *Use of ICT by Farm Women: A Step Towards Empowerment. Indian Research Journal of Extension Education*, 15 (3). pp. 60-65.
4. Kumar. S. P (2018) *Gender Budgeting- an Economic Initiative for Women Empowerment. International Journal of Educational Science and Research (IJESR)*, 8(1), 65-68
5. *Mobile Internet Report (2017). Internet and Mobile Association of India*
6. [www.fao.org.in/Empowering women through ICT](http://www.fao.org.in/Empowering%20women%20through%20ICT)
7. Sangeeta Sharma & Arup Kumar Bhattacharyya (2016), *Women Empowerment - A Blessing of Microfinance, BEST : IJHAMS*, 4(8), 93-98
8. Kiran Yadav, Rasheed Sulaيمان V, N.T. Yaduraju, Venkatraman Balaji and T.V.Prabakar (2015). *ICTs in Knowledge Management: the case of Agropedia platform for Indian agriculture. Knowledge Management for Development Journal* 11(2): 5-22.